CLAIMS

What is claimed is:

1. A method for determining a developmental or physiological stage of an organism comprising determining the expression of at least a first gene and a second gene, or gene fragment, said method comprising:

providing at least a first nucleic acid template derived from said first gene and a second nucleic acid template derived from said second gene

hybridizing at least one first primer to said first template and at least one second primer to said second template; and

determining binding of said primers to said templates in one reaction vessel.

2. The method according to claim 1, wherein determining binding of said primers to said templates comprises a sequencing step.

3. The method according to claim 2, wherein said sequencing step comprises sequencing amplified DNA.

4. The method according to claim 3, wherein said amplified DNA comprises PCR-amplified DNA.

5. The method according to claim 2, wherein a primer comprises a sequencing primer.

6. The method according to claim 5, wherein said primer can initiate a sequencing reaction carried out by a DNA polymerase.

7. The method according to claim 6, wherein said DNA polymerase is an RNA dependent DNA polymerase.

8. The method according to claim 6, wherein a dATP or ddATP analogue is used which is capable of acting as a substrate for said DNA polymerase, but incapable of acting as a substrate for a pyrophosphate detection enzyme.

9. The method according to claim 8, wherein said analogue comprises deoxyadenosine thio triphosphate (dATPaS).

10. The method according to claim 1, wherein said first gene and said second gene are variably expressed during said development.

11. The method according to claim 1, wherein said organism comprises a plant.

12. The method according to claim 1, wherein hybridizing at least one first primer to said first template and at least one second primer to said second template is performed in one reaction vessel.

13. The method according to claim 1, wherein providing at least a first nucleic acid template derived from said first gene and a second nucleic acid template derived from said second gene is performed in one reaction vessel.

14. The method according to claim 1, further comprising hybridizing at least one additional primer to said first template.

15. The method according to claim 14, wherein said additional primer is selected to hybridize at least in close proximity to a short stretch of identical nucleotides on said first template.

16. The method according to claim 1, wherein hybridizing at least one first primer to said first template and at least one second primer to said second template further comprises hybridizing at least one additional primer to said second template.

17. A method according to claim 16 wherein said additional primer is selected to hybridize at least in close proximity to a relative short stretch of identical nucleotides on said second template.